

CLAIMS:

1. An information recording method for recording information in an optical recording medium having at least stacked first and second information recording layers where information is recorded by projecting a pulse-like laser beam whose power is modulated between a plurality of levels including at least a recording power onto the optical recording medium via a light incidence plane and forming thereon a plurality of recording marks selected from a group consisting of several types of recording marks with different lengths, the information recording method comprising a step of setting the recording powers of a top pulse and/or a last pulse of the laser beam used when at least one recording mark is to be formed in the first information recording layer to be lower than the recording power of a multi-pulse thereof, thereby recording information in the first information recording layer.
2. An information recording method in accordance with Claim 1, wherein the first information recording layer is located on the side of the light incidence plane with respect to the second information recording layer.
3. An information recording method in accordance with Claim 1, wherein the recording power of the top pulse and the recording power of the last pulse are set to be at the same level.
4. An information recording method in accordance with Claim 1, wherein information is recorded in the second information recording layer with the recording powers of the top pulse and/or the last pulse of the laser beam set to be substantially the same as the recording power of the multi-pulse thereof.

5. An information recording method in accordance with Claim 1, wherein a wavelength λ of the laser beam and a numerical aperture NA of an objective lens satisfy the condition that λ/NA is equal to or shorter than 700 nm.

5 6. An information recording method in accordance with Claim 1, wherein the laser beam has a wavelength λ of 200 to 450 nm.

7. An information recording apparatus for recording information in an optical recording medium having at least stacked first and second information
10 recording layers where information is recorded by projecting a pulse-like laser beam whose power is modulated between a plurality of levels including at least a recording power onto the optical recording medium via a light incidence plane and forming thereon a plurality of recording marks selected from a group consisting of several types of recording marks with different
15 lengths, the information recording apparatus being constituted so as to set the recording powers of a top pulse and/or a last pulse of the laser beam used when information is to be recorded in the first information recording layer to be lower than the recording power of a multi-pulse thereof.

20 8. An information recording apparatus in accordance with Claim 7, wherein the first information recording layer is located on the side of the light incidence plane with respect to the second information recording layer.

9. An information recording apparatus in accordance with Claim 7,
25 wherein information is recorded in the second information recording layer with the recording powers of the top pulse and/or the last pulse of the laser beam set to be substantially the same as the recording power of the multi-pulse thereof.

10. An information recording apparatus in accordance with Claim 7,
wherein a wavelength λ of the laser beam and a numerical aperture NA of an
objective lens satisfy the condition that λ/NA is equal to or shorter than 700
5 nm.

11. An information recording apparatus in accordance with Claim 7,
wherein the laser beam has a wavelength λ of 200 to 450 nm.

10 12. An optical recording medium which has at least stacked first and
second information recording layers and in which information can be recorded
by projecting a pulse-like laser beam whose power is modulated between a
plurality of levels including at least a recording power onto the optical
recording medium via a light incidence plane and forming thereon a plurality
15 of recording marks selected from a group consisting of several types of
recording marks with different lengths, the optical recording medium
comprising setting information required for setting the recording powers of a
top pulse and/or a last pulse of the laser beam used when information is to be
recorded in the first information recording layer to be lower than the recording
20 power of a multi-pulse thereof.

13. An optical recording medium in accordance with Claim 12, wherein
the first information recording layer is located on the side of the light
incidence plane with respect to the second information recording layer.
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14. An optical recording medium in accordance with Claim 12, wherein
information is recorded in the second information recording layer with the
recording powers of the top pulse and/or the last pulse of the laser beam set to

be substantially the same as the recording power of the multi-pulse thereof.

15. An optical recording medium in accordance with Claim 12, which further comprises a light transmission layer and the light transmission layer
5 has a thickness of 30 to 200 μm .